

**Amendments to the Claims:**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

15. (Currently Amended) A method of inspecting, for each cell, unevenness of a partition wall surface of a cylindrical honeycomb structure having a plurality of cells functioning as passages for fluid and separated from each other by partition walls,

the method comprising the steps of:

allowing a diffusion light to enter from one end face side of a honeycomb structure by a predetermined lighting means and to exit from the other end face side of the honeycomb structure after passing it through the inside of the ~~cells~~,cells;

allowing the exited diffusion light to pass through a translucent screen disposed on the other end face side of the honeycomb structure to act as a transmitted ~~light~~,light;

projecting a transmitted image by means of the tone of the transmitted light onto the transmitted light side of the ~~screen~~,screen;

picking up the transmitted image projected on the screen by an imaging ~~means~~,and means;

analyzing by an analyzing means the gray level of the obtained image to inspect for each cell the level of the surface unevenness of the partition walls of the honeycomb ~~structure~~,structure; and

obtaining unevenness data of the partition walls from the obtained image.

16. (Previously Presented) A method of inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 15, wherein the screen is disposed so as to be in contact with the other end face side of the honeycomb structure.

17. (Currently Amended) A method of inspecting, for each cell, unevenness of a partition wall surface of a cylindrical honeycomb structure having a plurality of cells functioning as passages for fluid and separated from each other by partition walls,

the method comprising the steps of:

allowing a diffusion light to enter from one end face side of a honeycomb structure by a predetermined lighting means and to exit from the other end face side of the honeycomb structure after passing it through the inside of the ~~cells~~cells;

allowing the exited diffusion light to be picked up by an imaging means for each image from the direction perpendicular to the other end face of the honeycomb ~~structure~~and structure;

analyzing by an analyzing means the gray level of the obtained image to inspect for each cell the level of the surface unevenness of the partition walls of the honeycomb ~~structure~~structure; and

obtaining unevenness data of the partition walls from the obtained image.

18. (Previously Presented) A method of inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 15, wherein the gray level of the image is analyzed by being subjected to a binary treatment with the analyzing means.

19. (Previously Presented) A method of inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 17, wherein the gray level of the image is analyzed by being subjected to a binary treatment with the analyzing means.

20. (Previously Presented) A method of inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 15, wherein a shadow generated by the partition walls in the image is removed before the gray level of the image is analyzed by the analyzing means.

21. (Previously Presented) A method of inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 17, wherein a shadow generated by the partition walls in the image is removed before the gray level of the image is analyzed by the analyzing means.

22. (Previously Presented) A method of inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 15, wherein the diffusion light from the lighting means has an illuminance of 3000 Lux or more.

23. (Previously Presented) A method of inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 17, wherein the diffusion light from the lighting means has an illuminance of 3000 Lux or more.

24. (Previously Presented) A method of inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 15, wherein the screen has a light transmittance of 35 to 90%.

25. (Canceled)

26. (Currently Amended) An inspecting device for inspecting, for each cell, unevenness of a partition wall surface of a cylindrical honeycomb structure having a plurality of cells functioning as passages for fluid and separated from each other by partition walls, the inspecting device comprising:

a lighting means disposed on one end face side of the honeycomb structure and allowing a diffusion light to enter from one end face side of a honeycomb structure and to exit from the other end face side of the honeycomb structure after passing it through the inside of the ~~cells~~, cells;

a translucent screen disposed on the other end face side of the honeycomb structure, allowing the exited diffusion light to pass therethrough to obtain a transmitted light,

and capable of projecting a transmitted image by means of the tone of the transmitted light onto the transmitted light side of the ~~screen~~,screen;

an imaging means for picking up the transmitted image projected on the ~~screen~~,screen; and

an analyzing means for analyzing the gray level of the image picked up by the imaging means to inspect for each cell the level of the surface unevenness of the partition walls of the honeycomb structure.

27. (Previously Presented) An inspecting device for inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 26, wherein the screen is disposed so as to be in contact with the other end face side of the honeycomb structure.

28. (Currently Amended) An inspecting device for inspecting, for each cell, unevenness of a partition wall surface of a cylindrical honeycomb structure having a plurality of cells functioning as passages for fluid and separated from each other by partition walls, the inspecting device comprising:

a lighting means disposed on one end face side of the honeycomb structure and allowing a diffusion light to enter from one end face side of a honeycomb structure and to exit from the other end face side of the honeycomb structure after passing it through the inside of the ~~cells~~,cells;

an imaging means disposed on the other end face side of the honeycomb structure and allowing the exited diffusion light to be picked up for each cell from the direction perpendicular to the other end face of the honeycomb ~~structure~~,structure; and

an analyzing means for analyzing the gray level of the image picked up by the imaging means to inspect for each cell the level of the surface unevenness of the partition walls of the honeycomb structure from a result of analysis by the analyzing means.

29. (Previously Presented) An inspecting device for inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 26, wherein the gray level of the image is analyzed by being subjected to a binary treatment with the analyzing means.

30. (Previously Presented) An inspecting device for inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 28, wherein the gray level of the image is analyzed by being subjected to a binary treatment with the analyzing means.

31. (Previously Presented) An inspecting device for inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 26, wherein a shadow generated by the partition walls in the image is removed before the gray level of the image is analyzed by the analyzing means.

32. (Previously Presented) An inspecting device for inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 28, wherein a shadow generated by the partition walls in the image is removed before the gray level of the image is analyzed by the analyzing means.

33. (Previously Presented) An inspecting device for inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 26, wherein the diffusion light from the lighting means has an illuminance of 3000 Lux or more.

34. (Previously Presented) An inspecting device for inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 28, wherein the diffusion light from the lighting means has an illuminance of 3000 Lux or more.

35. (Previously Presented) An inspecting device for inspecting unevenness of a partition wall surface of a cylindrical honeycomb structure according to Claim 26, wherein the screen has a light transmittance of 35 to 90%.

36. (Canceled)